

Secret

2/51



DIRECTORATE OF
INTELLIGENCE

Intelligence Report

Soviet GNP In 1968 Prices, 1950-70

Secret

ER IR 71-8
March 1971

Copy No. **96**

Page Denied

SECRET

CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
March 1971

INTELLIGENCE REPORT

Soviet GNP In 1968 Prices
1950-70

Introduction

OER indexes of Soviet GNP and its components have been calculated in fixed prices of 1960. The sweeping price reform of mid-1967 and cumulative changes in wages in various sectors since 1960 necessitate the calculation of GNP price weights for a more recent year.

Although the complete set of national accounts required for a full assessment is still unavailable, enough information has been developed to permit the calculation of a new index of Soviet GNP using 1968 as the base year. This report is a preliminary assessment of the effects of the post-1960 wage and price changes on the measurement of the growth and structure of Soviet GNP.

In 1960, as has been true since the 1920s, almost all Soviet prices were set administratively and more or less arbitrarily. They deviated widely from actual costs of production, even as these costs are defined in the USSR. Furthermore, Soviet measures of production costs did not include a return to fixed and working capital or economic rent for the use of agricultural land and natural resources. To compensate for these defects in Soviet pricing, GNP by sector of origin and by end use were adjusted to approximate full returns to factors of production. The result was a set of factor cost weights for Soviet GNP in 1960. Although price reform brought established prices

Note: This report was prepared by the Office of Economic Research and coordinated within the Directorate of Intelligence.

SECRET

SECRET

more into line with production costs, the discrepancies between prices and real resource costs have not been removed completely. Therefore a factor cost adjustment is needed to convert GNP in prices of 1968 to a factor cost basis.

This report first examines the changes in established prices by major sectors of the economy. Then the established prices of 1968 are adjusted to a factor cost basis. Finally, the effect on the structure and growth of GNP of replacing 1960 factor cost weights with 1968 factor cost weights is examined. The GNP series includes preliminary indexes for 1970.

Soviet GNP in Established Prices of 1960 and 1968

1. The Marxist concept of material production is the foundation of Soviet national income accounting practice. Income arising from the production of physical output together with income earned in providing services such as transportation and communications to enterprises or persons engaged in physical production comprises national income. In contrast to Western national income accounting practice, income earned in providing other services such as health and education is excluded from national income. Official, published figures for Soviet national income, moreover, are so deficient in detail and documentation that they are nearly useless for analysis or comparison with GNP figures for other countries. Nevertheless, the data necessary to estimate Soviet GNP in Western terms can be assembled -- and mainly from official sources. Defense outlays are the principal missing element; and, because the budget category (defense) is incomplete and of uncertain coverage, military expenditures must be estimated indirectly.

2. GNP by sector of origin in established prices (the actual transaction prices) is the sum of value added in the various sectors of the economy -- industry, agriculture, and so forth.

SECRET

Value added consists of employee earnings, enterprise profits, depreciation, indirect taxes, and income-in-kind -- that is, the value of agricultural production consumed by farm households.*

3. GNP by end use in established prices is the sum of: expenditures by the population for food, soft goods, durable goods, and services (consumption); outlays for machinery, equipment, and structures (investment); and government outlays for health, education, research, defense, and civil administration. A comparison of Soviet GNP in 1968 measured alternatively in 1960 prices and in 1968 prices is shown in Tables 1 and 2. (Values in 1960 prices are obtained by moving 1960 sector weights forward to 1968 by appropriate sector indexes.**)

4. On the sector-of-origin side (Table 1***), the different price bases yield slightly different distributions of GNP in 1968. Agriculture and services account for larger shares of GNP in 1968 prices than in 1960 prices, while industry's share is smaller. This change in the relative shares of GNP originating in industry, agriculture, and services results from the relatively rapid growth of incomes in agriculture and services between 1960 and 1968 compared with the slower rise of wages, profits, and turnover taxes in industry.

* In the 1960 weights, agricultural income-in-kind is valued at average retail prices, which at the time were much higher than average prices paid to producers -- so-called "farmgate prices." This procedure was thought to give the best measure of the real cost of agricultural labor. By 1968, however, the gap between retail and farmgate prices had narrowed sufficiently to permit the valuation of agricultural income-in-kind at farmgate prices -- the usual practice in national income accounting.

*** Because of rounding, components may not add to the totals shown in this and other tables in this report.

25X1

Table 1
USSR: GNP by Sector of Origin in Established Prices
1968

	<u>Billion Rubles</u>		<u>Implied Percentage Change</u>	<u>Percentage Distribution</u>	
	<u>In 1960 Prices</u>	<u>In 1968 Prices</u>		<u>In 1960 Prices</u>	<u>In 1968 Prices</u>
Industry	141.97	148.15	4.4	51.0	48.7
Construction	14.73	16.58	12.6	5.3	5.4
Agriculture	44.34	53.03	19.6	15.9	17.4
Freight transportation	20.44	18.30	-10.5	7.3	6.0
Productive communications	1.63	1.24	-23.9	0.6	0.4
Domestic trade	15.15	16.16	6.7	5.4	5.3
Services	33.12	43.51	31.4	11.9	14.3
Education-science	7.91	10.79	36.4	2.8	3.5
Health	4.54	6.21	36.8	1.6	2.0
Housing	0.20	0.25	25.0	0.1	0.1
Military	7.00	9.74	39.1	2.5	3.2
Other	13.47	16.52	22.6	4.8	5.4
Other sectors	6.84	7.32	7.0	2.5	2.4
GNP	278.22	304.29	9.4	100.0	100.0

SECRET

- 4 -

SECRET

SECRET

Table 2
USSR: GNP by End Use in Established Prices
1968

	Billion Rubles		Implied Percentage Change	Percentage Distribution	
	In 1960 Prices	In 1968 Prices		In 1960 Prices	In 1968 Prices
Consumption	162.10	180.30	11.2	60.6	60.4
Food	79.47	89.31	12.4	29.7	29.9
Soft goods	40.16	42.38	5.5	15.0	14.2
Durable goods	8.49	9.08	6.9	3.2	3.0
Consumer services	19.01	18.96	-0.3	7.1	6.3
Health and education	14.97	20.57	37.4	5.6	6.9
Wages	10.21	15.18	48.7	3.8	5.1
Materials	4.76	5.39	13.2	1.8	1.8
Investment	79.43	90.83	14.4	29.7	30.4
New fixed investment	62.04	72.30	16.5	23.2	24.2
Construction	42.16	49.80	18.1	15.8	16.7
Machinery and equipment	19.88	22.50	13.2	7.4	7.5
Capital repair	16.13	16.50	2.3	6.0	5.5
Civilian R&D	1.26	2.03	a/	0.5	0.7
Defense b/	20.07	22.12	10.2	7.5	7.4
Administration c/	5.69	5.44	d/	2.1	1.8
Inventory change, net exports, statistical discrepancy	10.93	5.60	d/		
GNP	278.22	304.29	9.4	100.0	100.0

a. The substantial rise in the value of civilian R&D is caused by a revision of earlier estimates.

b. The estimates for all parts of GNP in 1968 prices are preliminary. That for defense, however, is especially uncertain since there have been no official announcements of price changes for military equipment. The revision of defense outlays represents a repricing of military rations, estimates of increases in earnings of civilian employees of the Ministry of Defense, an allowance for rising construction costs, and an estimated rise in military hardware prices of 6%.

c. Government outlays for purposes other than health, education, R&D, and defense.

d. The discrepancy between the value of this category in 1968 as opposed to 1960 prices is largely a statistical discrepancy caused by the lack of sufficiently accurate indexes of the growth of the category between 1960 and 1968.

SECRET

SECRET

5. The distribution of GNP by end use in established prices (Table 2) is virtually the same in 1968 prices as in 1960 prices. There are just three differences worth noting in the end-use distributions: (1) the weights for wages in health and education are higher in 1968 prices because of the 1965 wage reform in the service sectors; (2) successive increases in construction prices were enough to raise the weight of the construction component of investment; and (3) the relative stability of retail prices for soft goods, durable goods, and services led to some decline in the shares of these sectors.

Price Changes Between 1960 and 1968

6. The differences between distributions of GNP stated alternatively in 1960 and 1968 established prices stem from four principal developments in Soviet pricing since 1960:

- Prices and wages increased steadily in agriculture.
- The industrial price reform of mid-1967 raised average whole-sale prices on industrial products by 8% and raised prices on metals and power by even more.
- Successive increases in materials prices, wages, and overhead allowances pushed construction costs upward. The last of these adjustments took effect at the beginning of 1969 and has been included in the estimation of the 1968 weights.
- A massive 1965 wage reform in the service sectors, coupled with steady year-by-year wage increases, raised significantly the relative earnings of service workers.

SECRET

SECRET

7. Price changes implied by these major reforms are summarized in Tables 1 and 2. For each sector of origin and each end use, an implied price change is derived by dividing GNP in 1968 prices by GNP in 1960 prices.

8. Prices and incomes have risen more rapidly in agriculture than in any other sector of the economy. Average procurement prices paid to farms for grain rose 67% in 1961-68 and for meat, 82%. Meanwhile, prices received by farmers for products sold in collective farm markets increased by 25%. As a result, money income earned in agriculture rose by 100% between 1960 and 1968. Nevertheless, the implied price change of value added in agriculture is only 20%. Value added increased less than money income because procurement subsidies,* which are subtracted from income in the derivation of value added, rose by 300% between 1960 and 1968. If procurement subsidies had remained at the 1960 level, the implied price change of value added in agriculture would have been almost 80%.

9. The price reform carried out in industry in 1967 followed a lengthy period of promises and preparation. The new industrial wholesale prices which took effect on 1 July 1967 were designed to cover full production cost including an interest charge on fixed and working capital as well as economic rent on natural resources. The average profit rate for branches of industry was intended to be about 15% of the value of fixed and working capital.

10. The wholesale price reform altered the structure of value added in industry drastically. In 1968, profits (exclusive of amortization funds) were equal to employee earnings, whereas in 1960 profits were less than half of employee earnings. In effect, the three-fold increase in industrial profits has been at the expense of turnover tax collections, which rose by only 33%.

* Under the Soviet price system, prices paid producers for procurements of agricultural products may be increased without a corresponding increase in wholesale or retail prices. Expenditures for covering such price differences are financed by subsidy from the state budget.

SECRET

11. Although the new industrial prices are a better index of real production costs, GNP measured in established prices of 1968 still must be adjusted to approximate full returns to factors of production. This is so because the 1967 reform forced industrial prices out of line with prices in other sectors where extensive price reform did not take place. In these sectors, mainly services, profits rose very little between 1960 and 1968 in comparison with the growth of profits in industry. In services, profits still provide an especially inaccurate indication of the contribution of fixed capital and working capital to output.

GNP at 1968 Factor Cost

12. The derivation of GNP at factor cost in 1968 in general follows the procedures employed in estimating GNP at 1960 factor cost. The objective is to approximate the full cost of the resources used in each sector. To this end, value added in each sector of origin is adjusted by: (1) removing indirect taxes (mainly the turnover tax), (2) adding subsidies, (3) replacing profits by an imputed percentage return on fixed and working capital as a measure of the contribution of capital; and (4) assigning a rental charge for the use of agricultural land and for the use of certain basic natural resources.

13. The factor cost adjustments for 1960 and 1968 GNP differ only in the calculation of capital and rent charges. To estimate GNP at 1968 factor cost, capital charges were levied at the rate of 12% on all fixed and working capital except housing, which was assumed to earn a 6% return.* In the 1960 factor cost adjustment, a return of 8% was imputed to capital in the so-called productive sectors while the capital charge in the services sectors was 3%. In another procedural change, a charge which was imputed to fixed and working capital in the health and education sectors in the 1960 factor cost adjustment was dropped in the 1968 calculations because Western income accounting does not recognize a return to government fixed capital. Furthermore, no provision

* *On the basis of returns to housing in the United States.*

SECRET

was made in the 1960 factor cost adjustment for economic rent in certain extractive industries -- ferrous and nonferrous metals, petroleum extraction, and forest products. In constructing the 1968 factor cost adjustment, however, reported profits were accepted in these industries as a measure of all returns to capital and to land. Since the 12% capital charge is less than reported profits in these branches, the excess of profits over the capital charge is taken as a measure of economic rent.

14. GNP estimates for 1968 in factor costs of 1960 and of 1968 are presented in Tables 3 and 4. As with the 1960 weights, the principal effect of the factor cost adjustment is to lower the share of GNP arising in industry and to raise the shares of agriculture and services, especially housing. The effect of the factor cost adjustment, which is set out in detail in Appendix A, Table 9, can be summarized as follows:

	Billion Rubles		
	GNP in 1968 Established Prices	Factor Cost Adjustment	GNP in 1968 at Factor Cost
Industry	148	-56	92
Agriculture	53	14	67
Services	44	13	56
Other sectors	60		60
<i>Total</i>	<i>304</i>	<i>-29</i>	<i>275</i>

The factor cost adjustment for industry is negative because indirect taxes, which comprise the largest negative element in the total adjustment, are concentrated in industry. Forty-one billion rubles or 98% of all indirect taxes are included in the factor cost adjustment for industry.

15. The factor cost adjustment for GNP in 1968 prices amounts to -29 billion rubles, compared with an adjustment of -57 billion rubles implied for 1968 by the 1960-based index. The factor cost

Table 3

USSR: GNP by Sector of Origin at Factor Cost a/
1968

	<u>Billion Rubles</u>		<u>Implied Percentage Change</u>	<u>Percentage Distribution</u>	
	<u>In 1960 Prices</u>	<u>In 1968 Prices</u>		<u>In 1960 Prices</u>	<u>In 1968 Prices</u>
Industry	75.97	92.25	21.4	34.4	33.5
Construction	13.79	15.81	14.6	6.2	5.7
Agriculture	53.30	67.18	26.0	24.1	24.4
Freight transportation	18.94	17.61	-7.0	8.6	6.4
Productive communications	1.30	1.01	-22.3	0.6	0.4
Domestic trade	13.44	19.06	41.8	6.1	6.9
Services	40.61	56.11	38.2	18.4	20.4
Education-science	9.61	11.64	21.1	4.3	4.2
Health	5.16	6.47	25.4	2.3	2.4
Housing	7.07	12.48	76.5	3.2	4.5
Military	6.93	9.74	40.5	3.1	3.5
Other	11.84	15.78	33.3	5.4	5.7
Other sectors	3.74	6.24	66.8	1.7	2.3
GNP	221.09	275.27	24.5	100.0	100.0

a. For the derivation of GNP by sector of origin at factor cost, see Appendix A, Table 9.

SECRET

- 10 -

SECRET

SECRET

Table 4
USSR: GNP by End Use at Factor Cost a/
1968

	Billion Rubles		Implied Percentage Change	Percentage Distribution	
	In 1960 Prices	In 1968 Prices		In 1960 Prices	In 1968 Prices
Consumption	124.04	164.29	32.4	56.6	60.3
Food	59.28	78.26	32.0	27.1	28.7
Soft goods	21.65	30.46	40.7	9.9	11.2
Durable goods	4.32	6.25	44.7	2.0	2.3
Consumer services	22.82	29.17	27.8	10.4	10.7
Health and education	15.97	20.15	26.2	7.3	7.4
Wages	10.21	15.18	48.7	4.7	5.6
Materials	5.76	4.97	-13.7	2.6	1.8
Investment	71.19	83.27	17.0	32.5	30.5
New fixed investment	55.46	66.01	19.0	25.3	24.2
Construction	38.47	45.63	18.6	17.6	16.7
Machinery and equip- ment	16.99	20.38	20.0	7.8	7.5
Capital repair	14.45	15.22	5.3	6.6	5.6
Civilian R&D	1.28	2.04	b/	0.6	0.7
Defense	18.49	20.03	8.3	8.4	7.3
Administration	5.29	4.99	c/	2.4	1.8
Inventory change, net exports, statistical discrepancy	2.08	2.69	c/		
GNP	221.09	275.27	24.5	100.0	100.0

a. For the derivation of GNP by end use at factor cost, see Appendix A, Table 10.

b. The substantial rise in the value of civilian R&D is caused by a revision of earlier estimates.

c. The discrepancy between the value of this category in 1968 as opposed to 1960 prices is largely a statistical discrepancy caused by the lack of sufficiently accurate indexes of the growth of the category between 1960 and 1968.

SECRET

adjustment in 1968 prices is smaller because the major negative elements (profits and indirect taxes) are offset by relatively larger capital charges and subsidies, which are the major positive elements in the factor cost adjustment. The relatively smaller impact of the 1968 factor cost adjustment causes the ruble gap between the two sets of weights to be wider at factor cost than in established prices. As a result, the implied price changes are much higher at factor cost than in established prices.

16. The factor cost adjustment applied to GNP in established prices of 1968 has been distributed to end-use categories by the same method that was used to convert 1960 weights in established prices to factor cost. Adjustments in the services sectors were allocated directly to the appropriate end-use components (for example, the factor cost adjustment for housing on the sector-of-origin side is transferred directly to housing as a component of consumption on the end-use side). For productive sectors, the adjustments were allocated by a more complicated procedure involving the use of 1959 input-output relations.* Table 4 shows GNP by end use at factor cost in 1960 prices and in 1968 prices. (Table 10 in Appendix A shows the adjustment in detail.)

17. The net effect of the factor cost adjustment on the end-use side is small. Compared with the distribution in established prices, the distribution of GNP by end use at factor cost shows a slightly lower share for food and consumer durables, a larger drop in the share of soft goods, and a pronounced increase in the share of consumer services. The subtraction of indirect taxes as part of the factor cost adjustment explains the first three of these changes; the imputation of a charge for use of the Soviet stock of housing accounts for the rise in the share of consumer services.

* The goal was to estimate how much of the factor cost adjustment should be charged to the various end-use components. For example, the factor cost adjustment in the electric power branch of industry should be charged proportionately to end-use components which require electric power for their manufacture either directly or indirectly.

SECRET

SECRET

18. The distribution of GNP by end use at factor cost in 1968 prices, compared with the distribution in 1960 prices, has:

- (1) a higher share for consumption of food,
- (2) a higher share for consumption of soft goods,
- (3) a lower share for construction, and
- (4) a lower share for defense.

Shares for food and soft goods in 1968 prices exceed shares in 1960 prices because the subsidies that are paid to farmers in order to hold down retail prices were much larger in 1968 than in 1960. These subsidies are transferred directly from agriculture, on the sector-of-origin side, to food and to soft goods on the end-use side. Other differences in the two distributions are also attributable to changes in the factor cost adjustment. In established prices, the end-use distribution of GNP in 1968 prices is almost identical to the distribution in 1960 prices.

Growth of GNP at Factor Cost

19. The OER estimates of Soviet economic growth consist of indexes of GNP with factor cost weights. Estimates of growth derived from the new, 1968 factor cost weights are shown in Table 5. According to the sector-of-origin estimates, Soviet GNP grew at a very respectable 5.6% per year over the last 20 years. From 1950 to 1965, average annual growth declined fairly steadily from 6.1% in 1951-55 to 5.1% in 1961-65. In 1966-70, however, the growth of GNP recovered to 5.5% per year -- the level achieved during 1956-60. Through the early 1960s, a decline in the rate of growth occurred in all sectors except services and communications, while the recent upsurge in growth relied heavily on improved performance in industry and agriculture.

SECRET

Table 5

USSR: Growth of GNP at 1968 Factor Cost

						Percent
	1968 Factor Cost Weights <u>a/</u>	Average Annual Rates of Growth				
		<u>1951-70</u>	<u>1951-55</u>	<u>1956-60</u>	<u>1961-65</u>	<u>1966-70</u>
GNP by Sector of Origin						
Industry	33.5	8.4	11.2	8.5	6.9	7.0
Construction	5.7	9.1	12.4	13.6	3.8	6.6
Agriculture <u>b/</u>	24.4	3.2	3.7	2.9	2.6	3.5
Freight transportation	6.4	9.6	12.2	11.7	8.7	5.9
Productive communications	0.4	7.6	6.9	5.1	8.2	10.3
Domestic trade	6.9	8.8	12.4	8.8	5.7	8.2
Services	20.4	3.4	2.8	1.9	5.0	4.1
<i>GNP</i>		<i>5.6</i>	<i>6.1</i>	<i>5.5</i>	<i>4.1</i>	<i>5.5</i>
GNP by End Use						
Consumption	60.3	4.9	5.8	4.9	3.7	5.3
Investment	30.5	9.7	11.4	12.9	6.7	7.7
Defense	7.3	2.6	5.0	-3.4	4.1	4.9
Administration	1.8	1.7	-3.3	1.4	3.8	3.9
<i>Sum of end uses</i>		<i>5.7</i>	<i>6.3</i>	<i>5.7</i>	<i>4.5</i>	<i>6.0</i>

a. The share of the given sector or end-use component in GNP at factor cost.

b. The index for agricultural output used in this report is the official OER index which has been further adjusted to remove purchases by farmers from other sectors of the economy.

SECRET

- 14 -

SECRET

SECRET

20. The estimates of GNP as the sum of end uses confirm the trends shown by the sector-of-origin estimates. Because the end-use sum excludes inventory change and net exports, which at present cannot be measured adequately, the rates of growth by sector of origin and end use necessarily differ. In any case, the statistical discrepancies involved in estimating two independent sets of weights and indexes would cause sector-of-origin and end-use growth rates to diverge.

21. Since 1950, investment and defense have been the most volatile of the end-use components. In the last five years, however, the USSR managed a simultaneous increase in the rates of growth of investment and defense outlays while at the same time raising consumption's rate of growth.

22. The post-1960 price reform affects most of the sector indexes as well as the sector weights. Many of the sector-of-origin and end-use indexes are derived by aggregating physical quantities with price weights. Such indexes should be recalculated in 1968 prices before they are used to move the 1968 weights through time, but the USSR has not published the prices or the correction factors which would be needed to convert many of these indexes from 1960 to 1968 prices. However, the indexes of agricultural production, freight transportation, domestic trade, military personnel, defense, and consumption of food, soft goods, and durable goods could be recalculated. The most important omissions are the indexes for branches of industry, for construction, and for investment in new equipment. In a few cases it was not necessary to change the indexes. For example, indexes of education and health are derived from the number of employees in those sectors. Furthermore, in some service sectors, such as utilities and housing, prices did not change between 1960 and 1968.

23. Average annual rates of growth for major sectors of origin and for major end uses of GNP are presented in Table 5. Whether the individual sector indexes are calculated in 1960 prices or 1968 prices makes little difference. In fact,

SECRET

the industry, agriculture, freight transportation, domestic trade, and military personnel indexes are virtually identical in 1960 and 1968 prices. The end-use indexes are equally unaffected by the substitution of 1968 for 1960 price weights.

24. Since the use of 1968 prices does not change either the factor cost weights or the factor cost indexes much, it follows that the estimates of GNP growth in 1968 factor cost are not very different from the estimate in 1960 factor cost, as shown in Table 6.

Table 6

USSR: Comparison of GNP Average Annual
Growth Rates for 1968 and 1960 Factor Costs

	Percent				
	<u>1951-70</u>	<u>1951-55</u>	<u>1956-60</u>	<u>1961-65</u>	<u>1966-70</u>
Sector of origin					
1968 prices	5.6	6.1	5.5	5.1	5.5
1960 prices	5.7	6.2	5.8	5.1	5.5
Sum of end uses					
1968 prices	5.7	6.3	5.7	4.5	6.0
1960 prices	5.6	6.5	5.5	4.7	6.1

The discrepancy that remains between growth by sector of origin and growth by end use reflects the imprecision of the data available and the absence of net exports and inventory change from the sum of end uses. The period since 1960 has been particularly troublesome because of cyclical swings in agriculture. During 1961-70, grain reserves, livestock inventories, and net exports of grain fluctuated widely. If the impact of these developments on inventory investment and net exports could be taken into account, the difference between growth by sector of origin and

SECRET

SECRET

by end use would certainly have been reduced in 1961-65. The data on inventories and foreign trade for 1970 is too meager to permit a like judgment for 1966-70.

GNP in 1970

25. In 1970, the final year of the Eighth Five-Year Plan, Soviet GNP increased by 7.6%, the highest annual rate of growth since 1964. Although preliminary, the sector-of-origin rates of growth for 1970 show that, as in 1964, a bumper harvest following a poor crop year was responsible for the upsurge. Net agricultural output in 1970 soared by more than 13%, compared with an average annual rate of increase of little more than 1% in 1966-69, as shown in Table 7.

Table 7

USSR: Growth of GNP by Sector of Origin

	Percent	
	Average Annual (1966-69)	Preliminary (1970)
Industry	6.9	6.6
Construction	6.1	9.0
Agriculture	1.2	13.4
Freight transportation	5.8	6.5
Productive communi- cations	10.7	9.0
Domestic trade	8.4	7.5
Services	4.4	3.0
GNP	5.0	7.6

Other sectors fared less well. Indeed, the rate of growth of nonagricultural GNP in 1970 declined slightly to 6.0%, compared with an average gain

SECRET

of 6.2% a year in 1966-69. Rates of growth in industry, domestic trade, and services in 1970 were below the average achieved during 1966-69. The USSR, however, did manage to boost activity in its troubled construction sector by 9%, an increase markedly better than the 6% average increase in 1966-69 and far better than the 4% average annual rise in 1961-65.

Conclusions

26. Since 1960 the Soviet government has adopted a series of major price and wage changes in response to various economic problems. The result was an overall increase in prices of 9% between 1960 and 1 January 1969. The largest increases were a 35% wage increase in services, chiefly health and education and science, and an overall increase of 20% in agriculture on account of a succession of increases of wholesale prices and farm wages. The increase in agriculture would have been even larger except for state budget subsidies on agricultural products amounting to 7 billion rubles. The general reform of industrial prices in 1967 raised value added in industry by only 4%.

27. These price and wage changes are reflected in a preliminary calculation of GNP in 1968 established prices. Compared with GNP in 1960 prices, the relative share of agriculture and services was increased somewhat and that of industry and freight transportation was reduced. The shares of the end-use components -- consumption, investment, and defense -- were substantially the same in 1968 prices as in 1960 prices.

28. Although the price reforms of recent years were intended by Soviet planners to reduce the notorious divergence of prices and costs of production, the results were mixed. For example, profits in industry are a much higher percentage of capital stock than in other sectors. In 1960, profits in industry were less than half of employee earnings, but in 1968 they were equal. In effect, the USSR has been substituting levies

SECRET

SECRET

on profits for turnover taxes as a source of budget revenues. Because of the distortions in Soviet prices it has been standard procedure to adjust GNP in established prices to a factor cost basis. This adjustment is an attempt to approximate the full cost of production in all the producing sectors and thence in the end-use sectors. Shares of GNP in factor cost are used for weights for both the sector-of-origin indexes and the end-use indexes. Second, the end-use shares provide some indication of the relative effort devoted to end uses. In 1968 the major end-use shares in 1968 factor cost were:

	<u>Percent</u>
Consumption	60.3
Investment	30.5
Defense	7.3

29. The key elements of the factor cost adjustment are the subtraction of turnover and other indirect taxes, the substitution of imputed interest on fixed and working capital for profits as a measure of returns to capital, and the imputation of a charge for the use of natural resources such as agricultural land. The most significant change in the factor cost adjustment for 1968 from that for 1960 was the use of a 12% imputed interest rather than the 8% used for 1960. Neither the end-use nor the sector-of-origin distributions of GNP are very different in 1968 factor cost than in 1960 factor cost. This is explained largely by the higher imputed interest charge in 1968. The higher interest had a greater effect on industry than on agriculture and offset the relatively larger increase in farm wages. The GNP estimates in 1968, however, are preliminary. Data for estimating price changes for defense, for individual branches of industry, and for much of the farm sector and consumer services are still missing or sketchy.

SECRET

SECRET

30. The switch to 1968 factor cost weights results in rates of growth of GNP by sector of origin and end use which follow closely the 1960-based indexes. They show that in the past five years, the Brezhnev-Kosygin regime has halted the steady decline in growth of GNP that occurred in 1951-65. By five-year periods, the average annual growth in 1968 factor cost prices was as given in Table 8.

Table 8

USSR: Summary of Average Annual Growth
of GNP at 1968 Factor Cost

	Percent			
	<u>1951-55</u>	<u>1956-60</u>	<u>1961-65</u>	<u>1966-70</u>
GNP	6.1	5.5	5.1	5.5
By Major Sectors of Origin				
Industry	11.2	8.5	6.9	7.0
Agriculture	3.7	2.9	2.6	3.5
Services	2.8	1.9	5.0	4.1
By Major End Uses				
Consumption	5.8	4.9	3.7	5.3
Investment	11.4	12.9	6.7	7.7
Defense	5.0	-3.4	4.1	4.9

31. The apparent acceleration of growth in the last five-year period is due entirely to performance in 1970 and in particular to the exceptionally good harvest. In 1970, GNP grew by 7.6%, industry by 6.6%, and agriculture by 13.4%.

SECRET

APPENDIX A

USSR: Derivation of GNP in 1968 at Factor Cost

Table 9
Derivation by Sector of Origin a/

Billion Rubles										
	GNP by Sector of Origin in Established Prices	Factor Cost Adjustment							GNP at Factor Cost	
		Capital Charge	+ Rent	+ Subsidies	- Depreciation Adjustment	- Profits	- Indirect Taxes	= Total Factor Cost Adjustment	Value	Percentage Distribution
Industry	148.15	22.08			5.41	31.64	40.93	-55.90	92.25	33.5
Construction	16.58	2.68			1.00	2.45		-0.77	15.81	5.7
Agriculture	53.03	8.98	8.95	8.07	1.98	9.80	0.07	14.15	67.18	24.4
Freight transportation	18.30	7.42			1.77	6.34		-0.69	17.61	6.4
Productive communications	1.24	0.31			0.05	0.49		-0.23	1.01	0.4
Domestic trade	16.16	9.52			0.70	5.78	0.14	2.90	19.06	6.9
Services	43.51	14.79		0.43	-1.98	3.92	0.68	12.60	56.11	20.4
Education- science	10.79	0.41			-0.44			0.85	11.64	4.2
Health	6.21				-0.26			0.26	6.47	2.4
Personal transportation	7.26	2.88			0.91	2.44		-0.47	6.79	2.5
Personal communications	1.51	0.37			0.06	0.58		-0.27	1.24	0.5
Adminis- tration	2.88								2.88	1.0
Housing	0.25	9.57		0.43	-2.39		0.16	12.23	12.48	4.5
Utilities	2.90	1.32			0.12	0.71		0.49	3.39	1.2
Military	9.74								9.74	3.5
Recreation- culture	1.58	0.12			0.01	Negl.	0.52	-0.41	1.17	0.4
Personal services	0.39	0.12			0.01	0.19		-0.08	0.31	0.1
Other sectors	7.32	1.06			0.54	1.60		-1.08	6.24	2.3
GNP	304.29	66.84	8.95	8.50	9.47	62.02	41.82	-29.02	275.27	100.0

a. For a general description of sources of data, see Appendix B.

Table 10
Derivation by End Use a/

Billion Rubles

	GNP by End Use in Established Prices	Factor Cost Adjustment Transferred from:					GNP at Factor Cost	
		Industry	Agriculture	Services	Other Sectors	Total Factor Cost Adjustment	Value	Percentage Distribution
Consumption	180.30	-42.94	13.74	12.15	1.04	-16.01	164.29	60.3
Food	89.31	-23.62	12.05		0.52	-11.05	78.26	28.7
Soft goods	42.38	-13.81	1.46		0.43	-11.92	30.46	11.2
Durables	9.08	-2.92	0.04		0.05	-2.83	6.25	2.3
Services	18.96	-1.30	0.01	11.49	0.01	10.21	29.17	10.7
Utilities	3.40	-0.60		0.49		-0.11	3.29	1.2
Personal care	4.03	-0.40	0.01	-0.08	0.01	-0.46	3.57	1.3
Personal transport	6.52	-0.27		-0.47		-0.74	5.78	2.1
Personal communications	1.56	-0.03		-0.27		-0.30	1.26	0.5
Housing	1.78			12.23		12.23	14.01	5.1
Recreation and culture	1.67			-0.41		-0.41	1.26	0.5
Health	7.73	-0.69	0.08	0.26	0.01	-0.34	7.39	2.7
Wages	5.41						5.41	2.0
Materials	2.32	-0.69	0.08	0.26	0.01	-0.34	1.98	0.7
Education	12.84	-0.60	0.10	0.40	0.02	-0.08	12.76	4.7
Wages	9.77						9.77	3.6
Materials	3.07	-0.60	0.10	0.40	0.02	-0.08	2.99	1.1

SECRET
- 22 -

SECRET

Table 10
Derivation by End Use a/
(Continued)

Billion Rubles

	GNP by End Use in Established Prices	Factor Cost Adjustment Transferred from:					GNP at Factor Cost	
		Industry	Agriculture	Services	Other Sectors	Total Factor Cost Adjustment	Value	Percentage Distribution
Investment	90.83	-6.84	0.08	0.12	-0.92	-7.56	83.27	30.5
New fixed in- vestment	72.30	-5.57	0.07		-0.79	-6.29	66.01	24.2
Construction	49.80	-3.44	0.06		-0.79	-4.17	45.63	16.7
Machinery and equip- ment	22.50	-2.13	0.01			-2.12	20.38	7.5
Capital repair	16.50	-1.16	0.01		-0.13	-1.28	15.22	5.6
Civilian R&D	2.03	-0.11		0.12		0.01	2.04	0.7
Defense	22.12	-2.44	0.04	0.33	-0.02	-2.09	20.03	7.3
Administration	5.44	-0.44	0.01		-0.02	-0.45	4.99	1.8
Other	5.60	-3.24	0.28		0.05	-2.91	2.69	
GNP	304.29	-55.90	14.15	12.60	0.13	-29.02	275.27	100.0

a. For a general description of sources of data, see Appendix B.

SECRET
- 23 -

SECRET

SECRET

APPENDIX B

General Description of Sources of Data for the 1968 GNP Weights

This appendix describes briefly the primary sources for the 1968 GNP weights and for individual components of the factor cost adjustment. Except for collectivized agriculture and the defense sector, estimates are derived almost entirely from Soviet statistics.

A. Components of GNP by Sector of Origin in Established Prices

1. Wages and Other Labor Income

Wages are derived in most instances from statistics on average earnings and employment reported in the Soviet statistical handbook for 1968, 1/* and in a specialized handbook on labor and wages. 2/ Social insurance contributions as a percent of wage payments are reported in source 3/. Estimates of income arising in private activity as well as other income not covered by the Soviet "wage fund" must be estimated from gross data on income and expenditure of the population. The estimates of money income in collective farms as well as agricultural income in kind are estimated by OER using the 1968 handbook and specialized monographs on agricultural topics. 4/ Wages and subsistence in the defense sector are estimated by OSR.

2. Profits and Depreciation

Profits and allowances for depreciation in all sectors except collectivized agriculture are taken from the 1968 handbook. Profits and depreciation in collective farms are estimated by OER as part of a set of agricultural accounts derived from various Soviet publications. 5/

* For serially numbered source references, see Appendix C.

SECRET

3. Indirect Taxes

Indirect taxes include turnover tax, Communist party revenues, amusement taxes, collective farm market fees, and property incomes of local Soviets. Sources for these taxes include the 1968 handbook, OER's agricultural accounts, and estimates published by the RAND Corporation. 6/ Total turnover tax is allocated to individual branches of industry according to Vladimir Treml's unpublished estimates of the sectoral incidence turnover tax in 1966.

4. Subsidies

Agriculture and housing are subsidized. Almost all agricultural subsidies are procurement subsidies, which are estimated by OER. Housing subsidies represent the difference between rent receipts and costs of operation. Data for this calculation are found in several sources. 7/

B. Categories of GNP by End Use
in Established Prices

1. Consumption

Household purchases of food, soft goods, and durable goods are reported in the 1968 handbook. Estimates of the value of consumer services rely heavily on published Soviet data. There is no evidence that prices for consumer services have changed since 1960, so prices are taken from the 1960 GNP accounts. 8/ Quantities of services consumed in 1968 were derived from various Soviet sources. 9/

The 1968 handbook reports outlays for health and education in enough detail to estimate wages and material purchases. Data in source 10/ were also used.

2. Investment

Data on new fixed investment and civilian R&D are derived mainly from data in the 1968 handbook. Estimates of capital repair are based on amortization allowances for capital repair. 11/

SECRET

These allowances are adjusted, using data in source 12/, to approximate actual capital repair in 1968.

3. Defense

Values for Soviet outlays on defense and space programs are OSR estimates.

4. Administration

The expenditures for administration represent government outlays for purposes other than health, education, R&D, and defense. Outlays on administration are estimated from Soviet budget data published in the 1968 handbook.

C. Components of the Factor Cost Adjustment

1. Capital Charges

Capital charges are calculated by applying imputed rates of interest to the value of fixed and working capital in each sector of the economy. The rates of interest are based on US analogy, and the value of fixed and working capital is derived from data in the 1968 handbook.

2. Rent

Rent on agricultural land is assumed to represent 13% of total factor incomes in agriculture. The derivation of this rental charge is outlined in source 13/.

3. Subsidies

See section A, 4, above.

4. Depreciation Adjustment

Official allowances for depreciation, which cover depreciation for both replacement and capital repairs, are adjusted to approximate actual depreciation for replacement. Actual depreciation is calculated by applying current rates of depreciation for replacement 14/ to the value of fixed capital. The depreciation adjustment is equal to

SECRET

official allowances for depreciation less the value of estimated depreciation for replacement.

5. Profits and Indirect Taxes

See sections A, 2, and A, 3, above.

D. Allocation of the Factor Cost Adjustment to Categories of GNP by End Use

This distribution was made in part on the basis of data from the 1959 Soviet input-output table. Essentially, the procedure was as follows.

(a) Using the coefficients of both direct and indirect deliveries of each major sector of origin to final demand (end-use categories), the total deliveries of each major sector of origin to each major sector of final demand in the productive sectors were computed and a percentage distribution of the results was derived. This percentage distribution was then used to allocate most of the total factor-cost adjustment from sectors of origin to the respective end uses. (b) The turnover tax and other taxes were deducted directly from the various end uses on the basis of what is known about the incidence of these taxes (see Section A, 3, above). (c) The separate factor-cost adjustments for the various services (for example, housing) were transferred directly to the corresponding end uses.

Page Denied

Next 2 Page(s) In Document Denied

Secret

Secret